- Si $\det(\vec{u},\vec{v},\vec{w}) = 0 \Rightarrow \vec{u}, \vec{v}$ et $\vec{w}$ sont coplanaires
- Si $\det(\vec{u},\vec{v},\vec{w}) \neq 0 \Rightarrow \vec{u}, \vec{v}$ et $\vec{w}$ ne sont pas coplanaires.
- A, B, C et D sont coplanaires **ssi**

$$d(\vec{AB},\vec{AC},\vec{AD}) = 0$$

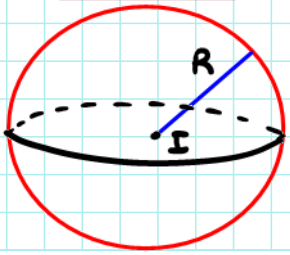
Sphère

$$\Gamma : x^2+y^2+z^2+ax+by+cz+d=0$$

$$\Leftrightarrow \left(x+\frac{a}{2}\right)^2+\left(y+\frac{b}{2}\right)^2+\left(z+\frac{c}{2}\right)^2 = \underbrace{-d+\left(\frac{a}{2}\right)^2+\left(\frac{b}{2}\right)^2+\left(\frac{c}{2}\right)^2}_{\Delta}.$$

- Si $\Delta < 0 \Rightarrow \Gamma = \phi$
- Si $\Delta = 0 \Rightarrow \Gamma = \left\{I\left(-\frac{a}{2},-\frac{b}{2},-\frac{c}{2}\right)\right\}$.
- Si $\Delta > 0 \Rightarrow \Gamma = S\left(I\left(-\frac{a}{2},-\frac{b}{2},-\frac{c}{2}\right); R=\sqrt{\Delta}\right)$

S(I,R)



Qarray.tn - Qarray Tech - Qarray.tn - Yma Tech - Qarray.tn